

**APPENDIX C:  
A COMPARISON OF  
IDFG COMMENTS (MARCH 17, 2000) ON DECEMBER 1999 DRAFT ALL-H PAPER  
AND NMFS SCIENTIFIC ANALYSIS IN THE DRAFT BIOP AND ALL-H PAPER  
(JULY 27, 2000)**

As part of a comprehensive response by the State of Idaho to the Federal Caucus' draft *Conservation of Columbia Basin Fish: Building a Conceptual Recovery Plan* (draft All-H Paper, December 1999), the Idaho Department of Fish and Game (IDFG) provided specific technical comments about the scientific analyses. These technical comments reflected concerns and support for the scientific underpinnings of the draft All-H Paper and draft A-Fish Appendix (Appendix A to the U.S. Army Corps of Engineers *Draft Lower Snake River Juvenile Salmon Migration Feasibility Report/Environmental Impact Statement*, DEIS), within the context of Snake River issues. Our intent was not to select specific management actions, but to help ensure the best possible science provides the analytical basis of the All-H Paper and A-Fish Appendix. The selection of conservation actions is a policy decision made in the context of biological and non-biological considerations; thus we did not make recommendations regarding alternatives presented in the draft All-H Paper. Instead, our focus is on helping strengthen the scientific foundation from which various conservation alternatives are considered. A strong scientific foundation for conservation decisions is a goal common to both the State of Idaho and the Federal Caucus. The following excerpt (IDFG 2000, p.1-2) describes IDFG concerns about the analysis in the December 1999 Draft All-H document:

We fully support the intent of the All-H Paper to accurately represent conservation opportunities and choices for preventing extinction and promoting recovery of ESA-listed salmon and steelhead. We believe significant errors and omissions in the draft All-H Paper currently preclude meeting this intent. If these errors and omission are corrected, the final All-H Paper can be a constructive aid in the decision-making process. Federal collaboration with state and tribal scientists could have avoided these errors and omissions; future collaboration will be crucial to meet the intent of the All-H Paper.

The errors and omissions of the draft All-H Paper stem primarily from the National Marine Fisheries Service (NMFS) Cumulative Risk Initiative (CRI) analyses of extinction risk and overall changes in productivity needed to reduce this extinction risk, allocations of mortality among life stages, and assessment of conservation opportunities among these life stages.

The CRI provides a useful framework for modeling extinction risk, which was not explicitly modeled by PATH. The CRI also provides an alternative analytical approach complementary to PATH for allocating mortality among life stages and assessing conservation opportunities. We believe the primary differences between results from CRI and PATH for various management alternatives is the result of errors, which, if corrected, are likely to bring a convergence of the science once again.

CRI extinction risk analyses should be corrected to include: the latest recruit per spawner data; more conservative extinction thresholds; apparent and potential depensation; depiction of necessary changes in population growth rate over the entire lifecycle, rather than just one year; and, distinction of A- and B-run steelhead as well as recognition of the population structure within these groups.

CRI allocations of mortality among life stages and assessment of conservation opportunities should be corrected to include: consistency with empirical information on adult-to-smolt and smolt-to-adult survival; disclosure of the full expression of mortality (direct and delayed) associated with life stages, and the weight of evidence in support of this designation; determination of “discretionary” mortality (i.e., total minus natural) associated with life stages; and assessment of conservation opportunities within the context of this discretionary mortality, recognizing the density-dependent relationship of population growth.

Some of the IDFG concerns were addressed in the subsequent Draft All-H paper (draft *Conservation of Columbia Basin Fish: Building a Conceptual Recovery Plan*, July 27, 2000) and Draft Biological Opinion (draft *Operation of the Federal Columbia River Power System Including the Juvenile Fish Transportation System and the Bureau of Reclamation’s 31 Projects Including the Entire Columbia Basin Project*, July 27, 2000). However, several substantial issues were either not addressed by NMFS, or in some cases, the changes accentuated the problems. A summary of these issues and recommendations are presented in the table below:

<b>IDFG Comment (3/17/00)</b>	<b>NMFS Draft All-H (7/27/00)</b>	<b>Recommendation</b>
1. CRI extinction risk analysis should be corrected to include (p. 2):		
1.a. Latest recruit per spawner data	Now includes returns through 1999, but some analyses use projected returns through 2004	Base period should not use projected returns
1.b. More conservative extinction thresholds	Now uses <i>least conservative</i> threshold of absolute extinction	Should use quasi-extinction thresholds of 10, 25 and 50 fish per population per year as per IDFG (2000; p. 10), in addition to 1995 BiOp survival standards
1.c. Apparent and potential depensation	Does not consider potential depensation	Use more conservative extinction thresholds as recommended in 1.b.
1.d. Depiction of necessary population growth rate over life-cycle, rather than just one year	Problem has been corrected	

1.e. Distinction of A-run and B-run steelhead, as well as recognition of population structure within these groups	Now models A-run and B-run aggregates separately, but extinction threshold still does not account for population structure	Should assume similar population structure for Snake River steelhead as for spring/summer chinook (at least 38 populations), and account for in quasi-extinction thresholds (e.g., for A & B aggregate: 38*10, 38*25, 38*50)
2. CRI allocation of mortality among life stages and assessment of conservation opportunities should be corrected to include (p. 2):		
2.a. Consistency with empirical information on adult-to-smolt and smolt-to-adult survival	Approach has been corrected, now appears similar to STUFA (2000)	
2.b. Disclosure of full expression of mortality (direct and delayed) associated with life stages	Direct and delayed mortality hypotheses are now incorporated as a range in the analysis	
2.c. And the weight of evidence in support of this designation	Not addressed	This is one of the critical omissions of the NMFS analysis. The PATH weight of evidence should be reported in the final All-H and BiOp. A collaborative, formal weight of evidence process should be completed incorporating any new information and evidence not considered in the PATH process (Marmorek and Peters 1998).
2.d. Determination of discretionary mortality associated with life stages	Not addressed	It is essential that off-site mitigation actions considered in RPA be evaluated in the context of discretionary mortality and feasible improvements. The evaluation should be collaborative.
2.e. And assessment of conservation opportunities within the context of this discretionary mortality	Not addressed	It is essential that off-site mitigation actions considered in RPA be evaluated in the context of discretionary mortality and feasible improvements. The evaluation should be collaborative.
2.f. Recognizing the density-dependent relationship of population growth	Not addressed	The spawner-recruit modeling results from PATH should be reported for any recovery assessment. CRI models should be re-calibrated to incorporate density dependence and carrying capacity concepts.

## **Literature Cited**

- Marmorek, D.R. and C.N. Peters (eds.) 1998. Plan for Analyzing and Testing Hypotheses (PATH) Weight of Evidence Report. August 21, 1998. ESSA Technologies Ltd., 1765 West 8<sup>th</sup> Avenue, Vancouver, B.C. V6J 5C6.
- STUFA (State, Tribal and U.S. Fisheries Agencies). 2000. A technical review of the National Marine Fisheries Services Leslie Matrix model of Snake River spring and summer chinook populations. April 28, 2000. Submitted to NMFS for the ESA Record.